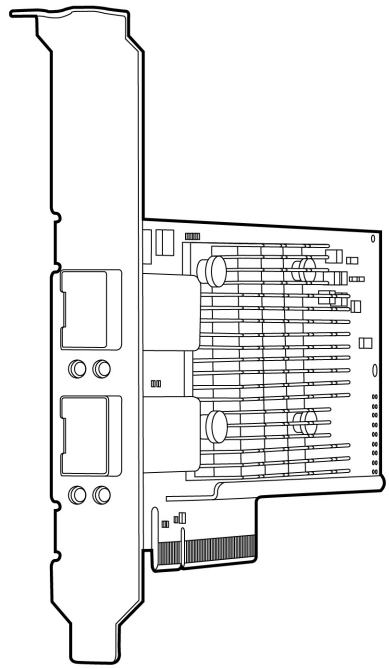
## Overview

The HP 530SFP+ is a dual-port 10Gb Ethernet adapter featuring the next generation BCM57810S single-chip solution from Broadcom in a PCIe 2.0 compliant form factor designed for select HP ProLiant Gen8 and Gen7 ML/DL/SL servers.

Leveraging Broadcom's market-proven architecture and software, the HP 530SFP+ delivers full line-rate performance across all ports with low power consumption.

The HP 530SFP supports enterprise class features such as VLAN tagging, adaptive interrupt coalescing, MSI-X, NIC teaming (bonding), Receive Side Scaling (RSS), jumbo frames, PXE boot and virtualization features such as VMware NetQueue and Microsoft VMQ.

Support for HP Sea of Sensors 3D Technology enhances server performance while reducing energy use and expense.



## Models

| | |
|---|---|
| HP Ethernet 10Gb 2-port 530SFP Adapter | 652503-B21 |

**Kit Contents**

- HP Ethernet 10Gb 2-port 530SFP+ Adapter
- Quick install card
- Product warranty statement

## Compatibility

**Servers**

**ProLiant DL (rack-optimized)**:

- HP ProLiant DL160 Gen8
- HP ProLiant DL165 G7
- HP ProLiant DL360e Gen8
- HP ProLiant DL360p Gen8
- HP ProLiant DL380e Gen8
- HP ProLiant DL380p Gen8
- HP ProLiant DL385p Gen8
- HP ProLiant DL560 Gen8
- HP ProLiant DL580 G7
- HP ProLiant DL585 G7
- HP ProLiant DL980 G7

**ProLiant ML (expansion-optimized):**

- HP ProLiant ML310e Gen8
- HP ProLiant ML350e Gen8
- HP ProLiant ML350p Gen8

**ProLiant SL (scalable line):**

- HP ProLiant SL230s Gen8
- HP ProLiant SL250s Gen8
- HP ProLiant SL270s Gen8
- HP ProLiant SL4540 Gen8 Server
- HP ProLiant SL4545 G7 Server

**NOTE:** This is a list of supported servers. Some may be discontinued.

## Standard Features

**Product Features**

- Industry-leading throughput and latency performance
- Up to 40Gb/s bi-directional near line rate throughput
- Hardware acceleration TCP/IP/UDP stateless offloads, as well as for TCP Offload Engine (TOE)
- Improved small packet performance
- Low profile design shipping with standard height and low-profile brackets
- SR-IOV capable in hardware (requires server FW, SW and OS support)
- Active Health Systems support via FW (OCBB), I2C capable
- PXE, Jumbo Frames, Checksum & Segmentation Offload, IPv6 and RSS
- On chip temperature monitor (OCSD)
- Standard server operating system support
- Standard NC series option kit warranty, support, services
- Field replaceable and upgradeable
- Support for Preboot eXecution Environment (PXE)
- Integrated PHY and MAC
- IEEE 1588 (Time Synchronization)
- Support for SR-IOV (Windows)

**Dual-port 10 Gigabit Ethernet Throughput**

The HP 530SFP+ adapter delivers 20 Gbps full duplex Ethernet transfer rate per port (40 Gbps per adapter), providing the network performance needed to improve response times and alleviate bottlenecks that impact performance of next generation data centers. 10Gb Ethernet bandwidth is ideal for high performance computing, database clusters, and more.

**Jumbo Frames**

The HP 530SFP+ adapter supports jumbo frames (also known as extended frames), permitting up to a 9K byte (KB) transmission unit (MTU) when running Ethernet I/O traffic. This is over 5X the size of a standard 1500-byte Ethernet frame. With jumbo frames, networks can achieve higher throughput performance and greater CPU utilization. These attributes are particularly useful for database transfer and tape backup operations.

**TCP/IP Stateless Offloading**

TCP, IP, UDP checksum offload, Large Send Offload (LSO), TCP, Segmentation Offload (TSO). These features optimize host efficiency, leaving the CPU available for other duties.

The HP 530SFP+ Adapter by Broadcom offers TCP/IP stateless offloading capability.

**MSI and MSI-X**

Message Signaled Interrupt (Extended) provides performance benefits for multi-core servers by load balancing interrupts between CPUs/cores. The HP 530SFP+ Adapter by Broadcom supports MSI and MSI-X.

**802.1Q VLANs**

IEEE 802.1Q virtual local area network (VLAN) protocol allows each physical port of the HP 530SFP+ adapter to be separated into multiple virtual NICs for added network segmentation and enhanced security and performance. VLANs increase security by isolating traffic between users. Limiting the broadcast traffic to within the same VLAN domain also improves performance. The HP 530SFP+ Adapter by Broadcom provides support for 802.1Q (VLAN).

## Standard Features

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| **TOE** | TCP/IP Offload Engine (TOE) shifts the processing of data in the TCP protocol stack from the server CPU to the adapter's processor, freeing server CPU cycles for other operations. |
| **Single-Root I/O Virtualization** | Single-Root I/O Virtualization (SR-IOV) provides a mechanism to bypass the host system hypervisor in virtual environments providing near metal performance and server efficiency. SR-IOV provides mechanism to create multiple Virtual Functions (VFs) to share single PCIe resources. The device is capable of SR-IOV, and requires Server BIOS support, controller firmware, and OS support. |
| **Optimized for Virtualization** | I/O Virtualization support for VMware NetQueue and Microsoft VMQ help meet the performance demands of consolidated virtual workloads. |
| **Checksum & Segmentation Offload** | Normally the TCP Checksum is computed by the protocol stack. By selecting one of the "Checksum Offload" parameters, the checksum can be computed by the adapter.<br><br>Segmentation Offload is technique for increasing outbound throughput of high-bandwidth network connections by reducing CPU overhead. The technique is also called TCP segmentation offload (TSO) when applied to TCP, or generic segmentation offload (GSO).<br>The HP 530SFP+ Adapter by Broadcom has Checksum and Segmentation Offload capabilities |
| **IPv6** | IPv6 uses 128-bit addressing allowing for more devices and users on the internet. IPv4 supported 32-bit addressing.<br>The HP 530SFP+ Adapter by Broadcom supports IPv6 |
| **Receive Side Scaling (RSS)** | RSS resolves the single-processor bottleneck by allowing the receive side network load from a network adapter to be shared across multiple processors. RSS enables packet receive-processing to scale with the number of available processors.<br><br>The HP 530SFP+ Adapter by Broadcom has RSS capabilities. |
| **Time synchronization implementations (PTP)** | Synchronization of system clocks throughout a network, achieving clock accuracy in the sub-microsecond range, making it suitable for measurement and control systems.<br>The HP 530SFP+ Adapter by Broadcom supports Precision Time Protocol-ready (PTP). |
| **Network Adapter Teaming** | The HP 530SFP+ adapter support for NIC teaming helps IT administrators increase network fault tolerance and increased network bandwidth, The team of adapters can work together as a single virtual adapter. The HP 530SFP+ provides support for several different types of teaming enabling IT administrators to optimize availability, improve performance and help reduce costs. |

## Network Management

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| **Management Support** | The HP 530SFP+ adapter can be administered from HP Systems Insight Manager (SIM). The adapters can be managed individually or in teams, providing SNMP based statistics for reporting purposes. The HP 530SFP+ adapter can also be managed by other applications with SNMP support. |

## Standard Features

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| **Server Integration** | The HP 530SFP+ adapter is a validated, tested, and qualified solution that is optimized for HP ProLiant servers. HP validates a wide variety of major operating systems drivers with the full suite of web-based enterprise management utilities including HP Intelligent Provisioning and HP Systems Insight Manager that simplify network management.<br><br>This approach provides a more robust and reliable networking solution than offerings from other venders and provides users with a single point of contact for both their servers and their network adapters. |
| **Configuration Utilities** | Each HP 530SFP+ ships with a suite of operating system-tailored configuration utilities that allow the user to enable initial diagnostics and configure adapter teaming. This includes a patented teaming GUI for Microsoft Windows operating systems. Additionally, support for scripted installations of teams in a Microsoft Windows environment allow for unattended OS installations. |
| **LED Indicators** | The colored LEDs on each port of the HP 530SFP+ adapter indicate link status and link activity. |
| **Preboot eXecution Environment (PXE)** | PXE allows the server to boot over the network and download software residing in the network. |
| **HP Sea of Sensors 3D** | Support for HP's Sea of Sensors which is a collection of 32 sensors that automatically track thermal activity - heat - across the server. When temperatures get too high, sensors can kick on fans and make other adjustments to reduce energy usage. What makes it better is the upgrade from all six fans kicking on at one time to a new system where only one kicks on - the one in proximity of the area that started heating up - thus reducing the amount of energy used for cooling. |
| **VMware NetQueue and Microsoft Virtual Machine Queue (VMQ)** | VMware NetQueue is technology that significantly improves performance of 10 Gigabit Ethernet network adapters in virtualized environments.<br><br>Windows Hyper-V VMQ (VMQ) is a feature available on servers running Windows Server 2008 R2 with VMQ-enabled Ethernet adapters. VMQ uses hardware packet filtering to deliver packet data from an external virtual machine network directly to virtual machines, which reduces the overhead of routing packets and copying them from the management operating system to the virtual machine.<br><br>The HP Ethernet 10Gb 2-port 530SFP+ Adapter by Broadcom support VMware NetQueue and Windows Hyper-V VMQ. |
| **Warranty** | Maximum: The remaining warranty of the HP product in which it is installed (to a maximum three-year, limited warranty).<br>Minimum: One year limited warranty.<br>Additional information regarding worldwide limited warranty and technical support is available at:<br>http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html |

Service and Support

**Service and Support**

**HP Technology Services**
HP Technology Services offers you technical consultants and support expertise to solve your most complex infrastructure problems. We help keep your business running, boost availability, and avoid downtime.

**Protect your business beyond warranty with HP Care Pack Services**
When you buy HP Options, it's also a good time to think about what level of service you may need. HP Care Pack services provide total care and support expertise with committed response choices designed to meet your IT and business need.

HP Foundation Care services deliver scalable support-packages for HP industry-standard servers and software. You can choose the type and level of service that is most suitable for your business needs. New to this portfolio is HP Collaborative Support. If you are running business critical environments, HP offers Proactive Care or Critical Advantage. These services help you deliver high levels of application availability through proactive service management and advanced technical response.

Here is the support service recommendation from the Foundation Care and Proactive Care portfolio. For customized support service solution, HP can work with you to tailor a service solution for your unique support requirements using broader services portfolio of Foundation Care and Proactive Care.

## Recommended HP Care Pack Services for optimal satisfaction with your HP product

**Recommended Services**

**3-Year HP 24x7 4 hour Response, Hardware Support Onsite Service**
Provides you with rapid remote support and if required an HP authorized representative who will arrive on site any time and day of the year to begin hardware maintenance service within 4 hours of the service request being logged.
http://h20195.www2.hp.com/V2/GetPDF.aspx/5982-6547EEE.pdf

**OR**

**3-Year HP 24x7 4 hour Response, HP Collaborative Support**
Offers customers a single point of contact for server problem diagnosis, hardware problem resolution, and basic software problem diagnosis, fault isolation, and resolution if available to HP. If the problem is with HP HW, the representative will arrive on site any time and day of the year to begin hardware maintenance service within 4 hours of the service request being logged. In case, the issue is with HP or supported third-party software product and cannot be resolved by applying known fixes, HP will contact the third-party vendor and create a problem incident on your behalf.

**HP ProLiant Server Hardware Installation**
Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner
http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN.pdf

Service and Support

## Related HP Care Pack Services to enhance your HP product experience

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| **Related Services** | **3-Year HP 24x7 4 hour Response, Proactive Care or Critical Advantage**<br>Helps optimize your systems and delivers high levels of application availability through proactive service management and advanced technical response. A skilled Technical Manager will own your query or issue end to end until resolved, delivering a single point of contact for you<br>http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA3-2140ENW.pdf<br><br>**OR**<br><br>**3-Year HP 6-hour Onsite Call-to-Repair, HP Collaborative Support**<br>Offers customers a single point of contact for server problem diagnosis, hardware problem resolution to return the hardware in operating condition within 6 hours of the initial service request to the HP Global Solution Center, and basic software problem diagnosis, fault isolation, and resolution if available to HP. In case, the issue is with HP or supported third-party software product and cannot be resolved by applying known fixes, HP will contact the third-party vendor and create a problem incident on your behalf.<br>**HP Proactive Select Service**<br>Provides a flexible way to purchase HP best-in-class consultancy and technical services. You can buy Proactive Select Service Credits when you purchase your hardware and then use the credits over the next 12 months. http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA2-3842ENN.pdf |
| **Insight Remote Support** | Provides 24 X 7 remote monitoring, proactive notifications, and problem resolution. Learn more http://www.hp.com/go/insightremotesupport |
| **HP Support Center** | Personalized online support portal with access to information, tools and experts to support HP business products. Submit support cases online, chat with HP experts, access support resources or collaborate with peers. Learn more http://www.hp.com/go/hpsc<br><br>HP's Support Center Mobile App* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime.<br>HP Insight Remote Support and HP Support Center are available at no additional cost with a HP warranty, HP Care Pack or HP contractual support agreement.<br><br>*HP' Support Center Mobile App is subject to local availability |
| **Parts and materials** | HP will provide HP-supported replacement parts and materials necessary to maintain the covered hardware product in operating condition, including parts and materials for available and recommended engineering improvements. Supplies and consumable parts will not be provided as part of this service; standard warranty terms and conditions apply. Parts and components that have exceeded their maximum supported lifetime and/or the maximum usage limitations as set forth in the manufacturer's operating manual or the technical product data sheet will not be provided, repaired or replaced as part of this service. |

## Service and Support

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| **Warranty / Service Coverage** | For ProLiant servers and storage systems, this service covers HP-branded hardware options qualified for the server, purchased at the same time or afterward, internal to the enclosure, as well as external monitors up to 22" and tower UPS products; these items will be covered at the same service level and for the same coverage period as the server unless the maximum supported lifetime and/or the maximum usage limitation has been exceeded. Coverage of the UPS battery is not included; standard warranty terms and conditions apply.<br><br>The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by HP due to malfunction. It does not apply to any exchange of Disk or SSD/Flash Drives that have not failed. SSD/Flash Drives that are specified by HP as consumable parts and/or that have exceeded maximum supported lifetime and/or the maximum usage limit as set forth in the manufacturer's operating manual or the technical data sheet are not eligible for the defective media retention service feature option. |
| **For more information** | To learn more on services for HP ESSN Options, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: http://www.hp.com/services/proliant or www.hp.com/services/bladesystem |

## Related Options

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| **Direct Attach Cable** | HP BladeSystem c-Class Small Form-Factor Pluggable .5m 10GbE Copper Cable | 487649-B21 |
| | HP BladeSystem c-Class Small Form-Factor Pluggable 1m 10GbE Copper Cable | 487652-B21 |
| | HP BladeSystem c-Class Small Form-Factor Pluggable 3m 10GbE Copper Cable | 487655-B21 |
| | HP BladeSystem c-Class Small Form-Factor Pluggable 5m 10GbE Copper Cable | 537963-B21 |
| | **NOTE:** Direct Attach Cable (DAC) must be purchased separately for copper environments. | |
| **Fiber Optic Modules** | HP BladeSystem c-Class 10Gb Short Range Small Form-Factor Pluggable Option | 455883-B21 |
| | HP BladeSystem c-Class 10Gb Long Range Small Form-Factor Pluggable Option | 455886-B21 |
| | HP X132 10G SFP+ LC SR Transceiver | J9150A |
| | **NOTE:** Fiber transceivers and cables must be purchased separately for fiber-optic environments. | |
| **Fiber Optic Cables** | HP 2M LC-SC Cable Kit (2Gb to 1Gb) | 221691-B21 |
| | 5M LC-SC Cable Kit (2Gb to 1Gb) | 221691-B22 |
| | HP 15M LC-SC Cable Kit (2Gb to 1Gb) | 221691-B23 |
| | HP 2m LC-LC FC Cable Kit | 221692-B21 |
| | 5m LC-LC FC Cable Kit | 221692-B22 |
| | HP 15m LC-LC FC Cable Kit | 221692-B23 |
| | HP 30m LC-LC FC Cable Kit | 221692-B26 |
| | HP 50m LC-LC FC Cable Kit | 221692-B27 |
| | HP LC to LC Multi-mode OM3 2-Fiber 0.5m 1-Pack Fiber Optic Cable | AJ833A |
| | HP LC to LC Multi-mode OM3 2-Fiber 1.0m 1-Pack Fiber Optic Cable | AJ834A |
| | HP LC to LC Multi-mode OM3 2-Fiber 5.0m 1-Pack Fiber Optic Cable | AJ836A |
| | HP LC to LC Multi-mode OM3 2-Fiber 15.0m 1-Pack Fiber Optic Cable | AJ837A |
| | HP LC to LC Multi-mode OM3 2-Fiber 30.0m 1-Pack Fiber Optic Cable | AJ838A |
| | HP LC to LC Multi-mode OM3 2-Fiber 50.0m 1-Pack Fiber Optic Cable | AJ839A |
| | **NOTE:** Fiber transceivers and cables must be purchased separately for fiber-optic environments. | |
| | **NOTE:** For additional information on 10Gb cable specifications go to: http://www.hewlett-packard.com/rnd/pdfs/10gig_cabling_technical_brief.pdf | |
| **Additional Supported Cables (Plug into HPN5900)** | HP X240 10G SFP+ to SFP+ 0.65m Direct Attach Copper Cable | JD095C |
| | HP X240 10G SFP+ to SFP+ 1.2m Direct Attach Copper Cable | JD096C |
| | HP X240 10G SFP+ to SFP+ 3m Direct Attach Copper Cable | JD097C |
| | HP X240 10G SFP+ to SFP+ 5m Direct Attach Copper Cable | JG081C |
| | HP X240 10G SFP+ to SFP+ 7m Direct Attach Copper Cable | JC784C |
| | HP X240 QSFP+ 4x10G SFP+ 1m DAC Cable | JG329A |
| | HP X240 QSFP+ 4x10G SFP+ 3m DAC Cable | JG330A |
| | HP X240 QSFP+ 4x10G SFP+ 5m DAC Cable | JG331A |
| **Additional Supported Cables (Plug into HPN6600)** | HP X242 10G SFP+ to SFP+ 1m Direct Attach Copper Cable | J9281B |
| | HP X242 10G SFP+ to SFP+ 3m Direct Attach Copper Cable | J9283B |
| | HP X242 10G SFP+ to SFP+ 7m Direct Attach Copper Cable | J9285B |

## Related Options

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|---|---|---|
| **Gigabit Server Adapters** | HP NC112T PCI Express Gigabit Server Adapter | 503746-B21 |
| | HP NC360T PCI-E Dual Port Gigabit Server Adapter | 412648-B21 |
| | HP NC365T 4-port Ethernet Server Adapter | 593722-B21 |
| | HP NC373F PCI-E Multifunction 1000SX Gigabit Svr Adapter | 394793-B21 |
| | HP NC373T PCI-E Multifunction Gigabit Server Adapter | 394791-B21 |
| | HP NC375T PCI Express Quad Port Gigabit Server Adapter | 538696-B21 |
| | HP NC382T PCI Express Dual Port Multifunction Gigabit Server Adapter | 458492-B21 |
| | HP Ethernet 1Gb 4-port 331FLR Adapter | 629135-B21 |
| | HP Ethernet 1Gb 4-port 331T Adapter | 647594-B21 |
| | HP Ethernet 1Gb 2-port 332T Adapter | 615732-B21 |
| **10 Gigabit Server Adapters** | **NOTE:** A minimum of two Gigabytes (2 GB) of server memory is required per each adapter. | |
| | **NOTE:** Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately. | |
| | HP NC522SFP Dual Port 10GbE Gigabit Server Adapter | 468332-B21 |
| | HP NC523SFP 10Gb 2-port Server Adapter | 593717-B21 |
| | HP NC524SFP Dual Port 10GbE Module | 489892-B21 |
| | **NOTE:** NC524SFP is available only on DL370 G6, ML370 G6, DL580 G7, DL585 G7, and DL980 G7. | |
| | HP NC550SFP Dual Port 10GbE Server Adapter | 581201-B21 |
| | HP NC552SFP 10Gb 2-port Ethernet Server Adapter | 614203-B21 |
| | HP Ethernet 10Gb 2-port 530T Adapter | 656596-B21 |
| | HP Ethernet 10Gb 2-port 560SFP+ Adapter | 665249-B21 |
| | **NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs | |
| **FlexibleLOM Adapters** | HP Ethernet 1Gb 4-port 331FLR Adapter | 629135-B21 |
| | HP Ethernet 1Gb 4-port 366FLR Adapter | 665240-B21 |
| | HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter | 647581-B21 |
| | HP Ethernet 10Gb 2-port 560FLR-SFP+ Adapter | 665243-B21 |
| | HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter | 629142-B21 |
| | **NOTE:** Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs | |

Technical Specifications

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|---|---|---|---|
| **General Specifications** | **Network Processor** | Broadcom BCM57810S chipset | |
| | **Data Rate** | Two ports, each at 20 Gbps full duplex; 40 Gbps aggregate full duplex theoretical bandwidth. | |
| | **Onboard Memory** | 256MB | |
| | **Bus Type** | PCI-e 2.0 x8 | |
| | **Form Factor** | Standard and low profile adapter compliant with the PCIe standard | |
| | **IEEE Compliance** | 802.3, 802.3ae, 802.3x, 802.2x, 802.3ad, 802.1Qaz, 802.1Qau, 802.1Qbb, 802.1Qbg, 802.1ax | |
| **Power and Environmental Specifications** | **Operating** | Temperature | 32° to 131° F (0° to 55° C) |
| | | Humidity | 5% to 95% non-condensing |
| | **Power** | 9W maximum | |
| | **Emissions classification** | Class A | |
| | **Agency approvals** | USA | FCC Part 15 Class A |
| | | Canada | ICES=--3, Issue 4 |
| | | Japan | VCCI V3 (2010.04) Class A |
| | | International | EN55022:2006 + A1:2007 Class A, EN55024:1998+A1:2011+A2; EN61000-3-2:2006, EN61000-3-3:2008 |
| | | Taiwan | BSMI, CNS13438 (2006) Class A |
| | | Australia/New Zealand (AS/NZS): | EN55022:2006+A12007 class A |
| | | Korea | KN22 Class A, KN24 |
| | **RoHS Compliance** | 6 of 6 | |
| | **Safety** | UL Mark (USA and Canada) | |
| | | CE Mark | |
| | | EN 60590 | |

**Operating System Support**

Microsoft Windows Server 2008, Server 2008R2, and HPC Server 2008, 32 and 64-bit

Microsoft Windows Server Hyper-V

Red Hat Enterprise Linux 5.7 and 6.1

SLES 10 and 11

VMware 4.1u2 and 5.0u1

Solaris 10

**NOTE:** For more Linux OS support & certification information, please visit our the ProLiant & BladeSystem Server Linux matrix: http://h18004.www1.hp.com/products/servers/linux/hplinuxcert.html

Technical Specifications

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| **Environment-friendly Products and Approach** | **End-of-life Management and Recycling** | Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner.<br><br>The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment. |

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